

## Oral erosive lichen planus-A case report and review on the management

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**Abstract:** Oral lichen Planus(OLP) is a chronic mucocutaneous autoimmune disease that mostly affects middle-aged females. Various factors including psychological stress, drugs and various systemic conditions has been linked to the etiopathogenesis of OLP. It has got several variants including reticular, erosive, atrophic and ulcerative-types. Erosive and atrophic variants have been most often linked to increased risk of developing into squamous cell carcinoma, hence such variants requires prompt diagnosis and treatment. This article reports a case of erosive OLP that had affected a 50-year old female who was under considerable stress and depression at the time of presentation. She is now being treated with topical corticosteroid therapy and started to respond favourably. We have attempted a brief review on various treatment modalities for OLP.

**Keywords:** corticosteroids, curcuminoids, erosive lichen planus, oral lichen planus, tacrolimus

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### I. Introduction

Oral lichen planus is a chronic inflammatory autoimmune disease that affects skin and mucosa. It is one of the most common dermatological conditions involving the oral cavity. Its prevalence in the general population is around 1% to 2%, and mostly affects females<sup>[1]</sup>. It has got several variants, erosive OLP being one of them. Unlike the keratotic variants like reticular and plaque-type lesion, erosive lichen planus are symptomatic and carries an increased risk of developing into squamous cell carcinoma. Hence erosive OLP requires a prompt palliation<sup>[2]</sup>. Here we report a case of erosive OLP affecting a middle-aged female who was undergoing a stressful phase in her life.

### II. Case Report

A 50-year-old female patient reported to the Department of Oral Medicine and Radiology with a chief complaint of burning sensation of the entire oral cavity that started almost 6 months back which was insidious and moderate in nature and aggravated on having spicy food. Dental history revealed that she has had uneventful extractions.

Patient is a Type II diabetic and under medication for the same. Personal history revealed that she had a mixed diet and had no deleterious habits whatsoever. She was at the time of consultation under considerable depression and stress and has not completely come to terms with her son's death 2 years back. Patient had undergone menopause 3 years and had no history of any post-menopausal complications.

On intraoral examination, bilateral erythematous erosive patches, one of size 1.5 x 2.5 cm was noted on left buccal mucosa opposite premolar – molar region and the other of size 2.5 x 3 cm was noted on the right buccal mucosa opposite molars. Both lesions exhibited faint white striae with mild melanin pigmentation at the periphery.[Fig 1 & 2]

All inspectory findings were confirmed on palpation during which the lesions were found to be mildly tender. Considering the clinical presentation and other related clinical history findings, the case was provisionally diagnosed as erosive lichen planus. Differential diagnosis considered for this case included discoid lupus erythematous, speckled leukoplakia and atrophic candidiasis. Patient was convinced to undergo incisional biopsy, prior to which all routine blood investigations were done. Fasting blood sugar was found to be 108mg/dl

Subsequent histopathological examination revealed areas of epithelial atrophy and basal cell degeneration with the presence of dense subepithelial band of chronic inflammatory cell infiltration. All these features were consistent with that of erosive lichen planus, thereby confirming the provisional diagnosis.

Patient was put on topical corticosteroid therapy (0.1% Triamcinolone acetate, Kenacort® oral paste) for a period 3 months. Patient was also referred to a clinical psychologist for stress counseling. Patient was advised to apply the paste locally over lesional areas 3 times daily after meals and was recalled after 7 days.

During the recall visit, there was considerable remission of the lesion and in the symptoms as well. [Fig 3 & 4]

### **III. Discussion**

Oral lichen planus (OLP) is a chronic mucocutaneous disease of unknown etiology. The main areas involved are the skin and oral cavity, but it can also occur in the genital mucous, scalp and nail. The common age group affected ranges from the third to sixth life decades and mostly affects females<sup>[3]</sup>. The cases of LP that are restricted to oral mucosa occur in 15% of all cases. Detailed reports of simultaneous occurrence of LP in the oral cavity and skin are uncommon<sup>[3,4]</sup>. Unlike the keratotic variants like reticular and plaque-type lesion, erosive lichen planus are symptomatic and requires prompt palliation. Erosive OLP presents as a mix of erythematous and ulcerated areas surrounded by finely radiating keratotic striae. When erosive OLP involves the attached gingival tissue, it is called desquamative gingivitis<sup>[5]</sup>. The etiology of OLP appears to be multifactorial and complicated. Ismail et al<sup>[6]</sup>. reported a list of causative and exacerbating factors for OLP and oral lichen planus reactions such as, drugs (anti-malarial, diuretics, gold salts, antiretroviral, beta blockers, pencillamine), dental materials (dental amalgam, composite and resin-based materials, metals), chronic liver disease and hepatitis C virus, genetics and tobacco chewing. In the present case, patient was on an oral hypoglycaemic for almost 3 years.

Watanabe T *et al* in 1986 concluded that human leukocyte antigen (HLA) associated genetic factors play a certain role in the pathogenesis of OLP<sup>[7]</sup>. A year later, Hedberg and associates reported that epithelium involved by OLP was consistently positive for HLA-DR<sup>[8]</sup>.

In a recent study conducted by Simarpreet et al, (2014) stressful life event was noted in 63.2% of the subjects at the time of OLP onset. No stressful life event was noted in 36.73% of the subjects at the time of OLP onset. 63% of the patients perceived stress with onset and waxing/waning of the OLP lesions<sup>[9]</sup>. In the present case, stress seems to be a possible aggravating factor besides use of oral hypoglycaemics, considering how depressed and stressed out the patient was following her son's death. Systemic diseases seen associated with OLP includes diabetes mellitus, hypertension, ulcerative colitis, myasthenia gravis, lupus erythematosus, etc<sup>[3]</sup>.

Current literature suggests that OLP is caused by cluster of differentiation 8 (CD-8) cell mediated damage to the basal keratinocytes leading to apoptosis. The antigen inciting the cytotoxic T cells could be any of the above mentioned factors. The main event in the pathogenesis appears to be increased production of cytokines leading to the recruitment of Langerhans cells and clonal expansion of cytotoxic cells. Langerhans cells produce increased amounts of interferon -alpha (IFN -  $\alpha$ ), which further activates cytotoxic cell mediated apoptosis, via the keratinocyte caspase cascade<sup>[3,10]</sup>.

#### **3.1 management**

Treatment is aimed primarily at reducing the length and severity of symptomatic outbreaks. Reticular and plaque forms of OLP being asymptomatic do not require pharmacologic intervention<sup>[5]</sup>. However since erosive variants carries an increased risk of turning into a malignancy, therefore it requires prompt treatment and follow-up.

##### **3.1.1 Psychotherapy**

Exacerbations of OLP have been often linked to the periods of psychological stress and anxiety. Prolonged emotive stress in OLP Patients has been proposed to lead to psychosomatization which in turn may contribute to the initiation and clinical expression of OLP and also suggested that psychosocial and emotional stress is one possible factor that may precipitate reticular OLP to transform to the erosive form<sup>[11]</sup>. Hence oral health care professionals should have adequate knowledge about neuroleptics and antidepressant medications and should promptly refer patients needing psychological counselling. Various Psychometric analysis tests have put forward by various authors to measure the scale of depression and anxiety. One such method employed in the present study was Hospital Anxiety Depression Scale (HADS). The HADS is a fourteen item scale that generates ordinal data. Seven of the items relate to anxiety and seven relate to depression.

Each item on the questionnaire is scored from 0-3 and this means that a person can score between 0 and 21 for either anxiety or depression.<sup>[12]</sup> In the present case, patient was under considerable emotional stress following her son's demise two years back and has still not been able to completely cope up with it. On HADS patient scored 8 for depression and 7 for anxiety. Hence as per the general accepted cut-off score this patient was found to fall in the borderline category. Hence, the patient was advised to undergo psychological stress counseling by referring the patient to a clinical psychologist

##### **3.1.2 Corticosteroids**

Topical or systemic corticosteroids is the main-stay of the treatment for lesions of OLP and it functions by modulating the patients immune response. This is done primarily by suppressing the T-cell activity. Topical corticosteroids are mainly implemented for treating mild to moderately symptomatic lesions. Following are the common topical formulations listed according to decreasing potency:

1. 0.05% clobetasol propionate gel

2. 0.1% or 0.05% betamethasone valerate gel
3. 0.05% fluocinonide gel
4. 0.05% clobetasol butyrate ointment or cream
5. 0.1% triamcinolone acetonide ointment.<sup>[13,5]</sup>

We, in the present case, had prescribed topical formulation of 0.1% triamcinolone acetonide marketed in India in oral paste form under the trade name Kenacort.

Patient was advised to apply the paste locally over the area of the lesion 3 times daily after meals for a period of three months. Patient was recalled after a week to check for any remission in the lesion and also for the presence of any candidal super infection which is a possible adverse-effect of this therapy. There was considerable remission in the lesion without any sign of candidal infection. Intralesional injection of corticosteroid are reserved for recalcitrant or extensive lesions administered as subcutaneous injection of 0.2–0.4 mL of a 10 mg/mL solution of triamcinolone acetonide by means of a 1.0-mL 23- or 25-gauge syringe<sup>[5]</sup>. Systemic steroid therapy should be reserved for patients who are recalcitrant to topical steroid management. Dosages should be individualized according to the severity of the lesions and the patient's weight and should be modified on the basis of the patient's response to treatment. The oral dose of prednisone for a 70-kg adult ranges from 10–20 mg/day for moderately severe cases to as high as 35 mg/day (0.5 mg/kg daily) for severe cases<sup>[5]</sup> It is prudent to take prednisone as a single morning dose so as to reduce the potential for insomnia and should be taken with food to avoid nausea and peptic ulceration.

When systemic periods extends longer than 2 weeks, the dosage of steroid must be gradually tapered to avoid precipitating an adrenal crisis.

Steroids should be used with caution in patients with herpetic infections, glaucoma, pregnancy, HIV infection, tuberculosis, diabetes mellitus and hypertension<sup>[5]</sup>

### **3.1.3 Other Modalities**

Amlexanox is a topical anti-inflammatory and immunomodulatory drug. Amlexanox 5% paste is well-tolerated, and is typically applied four times per day directly on the lesion. Amlexanox can inhibit the formation and release of histamine, TNF- $\alpha$ , and leukotrienes from mast cells, neutrophils<sup>[14]</sup>. A single randomized, positive-controlled clinical trial has been very recently published showing similar efficacy of 5% amlexanox paste compared with dexamethasone 0.043% paste.<sup>[15]</sup>

Topical application of tacrolimus(0.1%) has found to be very effective in treating symptomatic OLP owing to its potent anti-inflammatory and immunomodulatory action. The anti-inflammatory molecular mechanism of action of tacrolimus is through the inhibition of the production of IL-2 by T lymphocytes which is done by inhibiting calcineurin. This leads to inhibition of various other cytokines like IL-4 and IL-5 and thereby suppressing the activation and differentiation of inflammatory cells such as T lymphocytes, eosinophils or neutrophils<sup>[16]</sup>.

Pimecrolimus (PI) is a semi-synthetic product of ascomycin which itself is an ethyl analogue of tacrolimus. Mode of action is similar to that of tacrolimus i.e via calcineuring inhibition but is more selective, with no effect on dendritic (Langerhans) cells. Four placebo controlled RCTs found 1% pimecrolimus cream to be an effective and well-tolerated treatment for erosive OLP<sup>[14]</sup>

Aloe vera(AV) is anti-inflammatory, antibacterial, antiviral and antifungal properties, and has hypoglycemic effects. Two very recent randomized comparative studies suggest that AV can be as effective as triamcinolone acetonide (TA) 0.1% on OLP. Active ingredient of aloe vera includes: Lignins, Saponins, Anthraquinones.<sup>[14,17]</sup>

Curcuminoids have been well known as the major components in turmeric. Two RCTs on OLP have been published by the same group of researches. The first study, comparing low doses of curcuminoids (2000 mg/day for 7 weeks) and prednisolone (60 mg/day for 1 week) with prednisolone alone, was withdrawn at the first interim analysis for futility. The second one employing higher doses (6000 mg/ day) showed some benefit particularly during the follow-up<sup>[14,18,19]</sup>.

Curcumin acts through suppression of the inflammatory response that may involve inhibition of the induction of COX-2 and production of cytokines such as interferon.<sup>[18]</sup>

Lycopene (Ly) is a red-colored carotenoid predominantly seen in tomatoes. A recent randomized, double-blind, placebo-controlled study found Ly (8 mg/day) helpful in reducing OLP symptoms. However, the placebo group had a similar response. It has got no known significant adverse effects except that fact that its high intake can cause transient orange discoloration of the skin<sup>[14,20]</sup>.

#### IV. Figures



Figure 1 – left buccal mucosa



Figure 2 – right buccal mucosa



Figure3–1week after starting treatment  
(right buccal mucosa)



Figure4–1 week after starting treatment  
(left buccal mucosa)

#### V. Conclusion

Patients with OLP, especially those with erosive variants, should be well informed about the chronicity of the condition and also about the high risk of malignant transformation it carries as reported by several authors. Hence a regular and meticulous follow – up is imperative in such patients. Since many alternative therapies, other than the mainstay steroid therapy reviewed in this article, have shown promising results in various studies , a clinician should still be mindful about the cost-benefit and the safety profile of these drugs.

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